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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,183	08/10/2001	Oludele Olusegun Popoola	198-1162	5329

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EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,183

Applicant(s)

POPOOLA ET AL.

Examiner

Lawrence D Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed December 2, 2003. Claims 1-2, 5 and 7 were amended rendering claims 1-2, 5 and 7 pending.

Claim Rejections – 35 USC § 103(a)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Longo et al (US 3,723,165).
4. Longo discloses a thermally sprayed article, using flame spraying, for applying metal and plastic coatings (column 1, lines 7-49) where the plastics include polymers (column 1, lines 65-68). Longo discloses a metal substrate material can be sprayed on the article to form an inner layer (column 3, lines 54-60) where the sprayed coating forms the outer layer. Longo discloses the mixture of plastic powder and metal are co-deposited (column 2, lines 46-60) where the bond coat has a thickness of 0.005 inches and the top coat has a thickness of 0.001 inches (column 4, lines 15-20) resulting in the

hardness of the outer layer being less than that of the inner layer. This would be inherent, because the plastic/metal mixture would be softer than the base metal alone. Although Longo does not explicitly disclose the inner layer is thermally sprayed, it would have been obvious to the average artisan that the inner coating is made by a specified form of thermal spraying, which is flame spraying.

Claim Rejections – 35 USC § 103(a)

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wall (US 5,069,937).

Wall discloses thermally spraying a metal substrate by flame-spraying the metal substrate with a polymer adhesion before thermal spraying the substrate (column 1, lines 4-15). Although Wall discloses the inner layer is flame-sprayed and the outer layer being thermally sprayed, the reference teaches thermal spraying and flame spraying are equivalents (column 1, lines 50-54). Wall does not disclose the thickness of the sprayed coatings. However, such thicknesses are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitation of the thicknesses, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. thicknesses) fails to render claims patentable in the absence of unexpected results. The thickness is optimizable as it directly affects the integrity and mechanical strength of the thermally

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sprayed metal article. As such, they it is optimizable. It would have been obvious to one of ordinary skill in the art to make the thermally sprayed article with the limitations of the thicknesses since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215 (CCPA 1980).

Response to Arguments

6. Applicant's arguments to rejection made under 35 USC 102(b) as being anticipated by Longo et al (US 3,723,165) has been withdrawn; however Longo et al. has been maintained as being obvious over instant claims 1, 2, 5 and 7. Applicant argues Longo does not disclose an article substrate having an inner layer thermally sprayed on the article substrate and an outer layer flame sprayed on the inner layer. Although Longo does not explicitly disclose the inner layer is thermally sprayed, it would have been obvious to the average artisan that the inner coating is made by a specified form of thermal spraying, which is flame spraying. Applicant maintains Longo lacks an inner layer thermally sprayed on the article substrate of a metal material having a first predetermined thickness and an outer layer flame sprayed on the inner layer of a composite made of a polymer and metal material. Examiner disagrees because Longo discloses a metal substrate material can be sprayed on the article to form an inner layer (column 3, lines 54-60) where the sprayed coating forms the outer layer. Longo discloses the mixture of plastic powder and metal are co-deposited (column 2, lines 46-60) where the bond coat has a thickness of 0.005 inches and the top coat has a thickness of 0.001 inches (column 4, lines 15-20). Although Longo does not explicitly

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disclose the inner layer is thermally sprayed, it would have been obvious to the average artisan that the inner coating is made by a specified form of thermal spraying, which is flame spraying.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lawrence D. Ferguson
Examiner
Art Unit 1774

CYNTHIA H. KELLY
SUPERVISOR
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